Installation Guide

Dell® Wyse Z Class Conversion to WES7p

Wyse USB Firmware Tool™ Release 1.20.0.1

Products: Z90D7, Z90S7, Z90DE7, Z90DW, Z90SW

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1 Introduction

This guide provides step-by-step instructions to use Wyse USB Firmware Tool to convert the following Wyse Z class thin clients to WES7p:

- Z90D7
- Z90S7
- Z90DE7
- Z90DW
- Z90SW

CAUTION: WES7p firmware requires Z class thin clients to have a minimum of 8 GB Flash and 4 GB RAM (16 GB Flash and 4 GB RAM is recommended).

TIP: After converting your thin clients, obtain any available firmware update at http://www.wyse.com/serviceandsupport/support/downloads.asp.

Kit Contents

The conversion kit can include:

- Conversion Software Assembly DVD-ROM
- Flash module (16 GB)
- Wyse Conversion Labels (you must attach a Wyse label to each converted thin client)
- Microsoft License Labels (you must attach a COA label to each converted thin client)

Figure 1 Kit contents (items may look different or not be included in your kit)

The Conversion Software Assembly DVD-ROM contains:

- A PDF of this Reference Guide
- Wyse USB Firmware Tool Release 1.20.0.1
- Z Class WES7p Conversion Image folder containing the following files:
  - bios.img
  - commandsXml.xml
  - initrd.pxe
  - Merlin.log

- mbr.img
- par1.img
- par2image1.img
- par2image2i.img
- vmlinuz

Kit Warranty

The warranty on the hardware component of this kit assumes the remaining months of warranty of the thin client in which it is installed, or for 90 days, whichever is greater. Installation of this kit will not void the factory warranty, however the user will be responsible for damage due to improper installation.

Overview

To convert your Z class thin clients to WES7p:

1. (Optional) If you need to perform a hardware installation (install new flash), complete "Installing Z Class Flash."
2. (Required) Complete "Installing WES7p Firmware."

Dell Technical Support

To access Dell technical resources, visit http://www.wyse.com/support. If you still have questions, you can submit your questions using the Self-Service Center at http://support.wyse.com/selfservice.html or call Customer Support at 1-800-800-9973 (toll free in U.S. and Canada). Hours of operation are from 6:00 A.M. to 5:00 P.M. Pacific Time, Monday through Friday.

To access international support, visit http://www.wyse.com/global.

Related Documentation and Services

Fact Sheets containing the features of hardware products are available on the Dell Web site. Go to http://www.wyse.com/products and use the Cloud clients tab to locate and download the Fact Sheet for your hardware product.

Administrator and other documentation for your cloud client model are available at: http://www.wyse.com/manuals.

Dell Online Community

Dell maintains an online community where users of our products can seek and exchange information on user forums. Visit the Online Community forums at: http://community.wyse.com/forum.

2 Installing Z Class Flash

This chapter contains information for users of Wyse Z class thin clients who must install new flash. If you are installing firmware only, you can skip this chapter and proceed to "Installing WES7p Firmware."

Requirements

- Small Phillips screwdriver

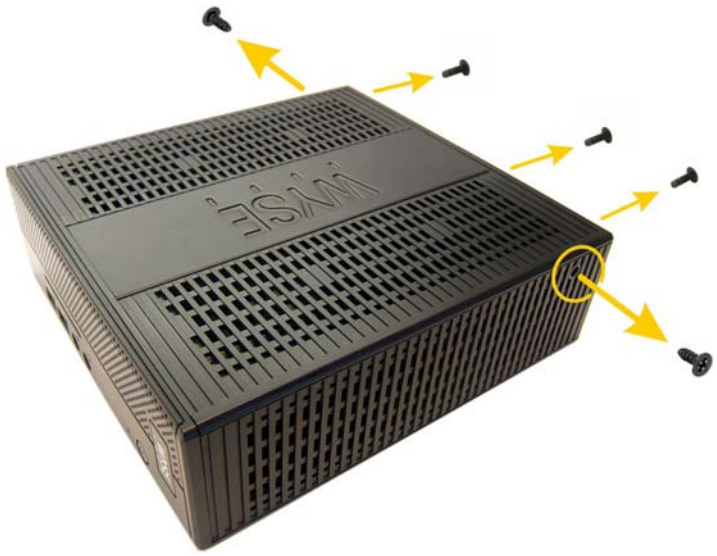
WARNING: Flash modules may be susceptible to damage by Electro-Static Discharge (ESD). All industry-standard cautions should be followed to avoid ESD. Before you remove or install a module, touch any metal part of the chassis and keep that contact with the chassis during the installation process.

Procedures

CAUTION: Follow all precautions listed in the Quick-Start Guide that came with your thin client for disconnecting and reconnecting the thin client.

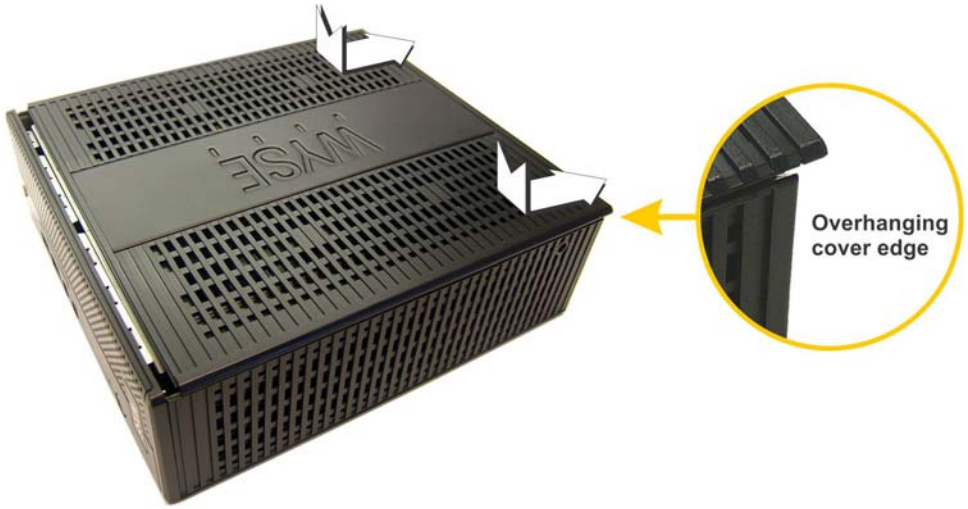
1. Perform a proper shutdown of the thin client by closing all files and ending your session, and then pressing the power button to turn off the thin client.
2. Unplug the power cord and power adapter, and remove any other cables from the thin client, and detach the vertical foot.
3. Position the thin client horizontally, where the side with four flat screws is facing downward. Using the Phillips Screwdriver remove the two screws from either end near the back panel, and then remove the three screws from the cover along the back panel edge, as shown in Figure 2.

Figure 2 Removing the cover screws



4. Place your thumbs on the top surface above where the end screws were removed. With a continuous motion, push firmly downward and towards the back panel (pushing down unlatches the hooks under the cover). The cover will shift approximate 1/4 inch to hang over the back panel, as shown in Figure 3.

Figure 3 Unlatching the cover



5. **(a)** Grasp the overhanging cover edge and raise the edge about 1-1/2 inches, and then **(b)** pull the cover out towards the back panel at the same angle to free the opposite end of the cover from the remaining hooks, as shown in Figure 4.

Figure 4 Removing the cover

6. Remove the cover to expose the flash module, as shown in Figure 5.
WARNING: Flash modules may be susceptible to damage by Electro-Static Discharge (ESD). All industry-standard cautions should be followed to avoid ESD. Before you remove or install a module, touch any metal part of the chassis and keep that contact with the chassis during the installation process.

7. Remove the existing flash module. Locate the flash module and use the Phillips Screwdriver to remove its retaining screw as shown in Figure 5. Lift the flash module out of the socket.

Figure 5 Removing the existing flash module

8. Install the new flash module in the reverse order of removing the original flash module. Carefully screw down its retaining screw until it is secure.
9. **(a)** Align the cover screw tabs with screw holes and press downward; **(b)** slide cover toward the front of the thin client, as shown in Figure 6.

Figure 6 Reattaching the cover

10., Attach the screws in the reverse order as described in step 3.

11. Connect the power cord and power adapter, attach any other cables to the thin client, and then attach the vertical foot.
CAUTION: Do not turn on the thin client. The thin client is ready to re-image, however the flash module does not contain an operating system. Turning on power to your thin client without firmware will display the error message "NO OPERATING SYSTEM FOUND."

12. Continue with "Installing WES7p Firmware."

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3 Installing WES7p Firmware

This chapter includes the requirements and procedures you need to install and use Wyse USB Firmware Tool to update your thin client to WES7p firmware.

TIP: The purpose of the USB Firmware Tool is to configure a bootable USB key for device firmware. In the following procedures, you will create a configured USB key containing the firmware contents that you need, and then boot from this configured USB key on appropriate product and flash size devices to push the contents of the USB key onto these target devices.

EXTREEMLY IMPORTANT: You must perform the steps to create and use the configured USB key on each thin client as noted. You cannot completely convert one thin client and then use the USB Firmware Tool to pull and push that image to your other thin clients.

Requirements

- Machine with a **minimum of 16 GB of free space** running either of the following:
  - Windows Server 2008 R2 SP1
  - Windows 7 Enterprise (32-bit and 64-bit)
  - Windows 7 Ultimate (32-bit and 64-bit)
- USB Key:
  - USB 2.0 only
  - USB key size should be 16 GB (see also "USB Keys - Troubleshooting Boot Issues")

  CAUTION: During the USB key configuration process the USB keys will be reformatted.

Procedures

IMPORTANT: Complete the following procedures as an administrator (administrator privileges are required).

Step 1: Copy the Z Class WES7p Conversion Image Folder (on the DVD-ROM) to Your Local Hard Drive

Navigate to the Z Class WES7p Conversion Image folder (contained on the Conversion Software Assembly DVD-ROM) and copy it to your local hard drive.

Step 2: Install Wyse USB Firmware Tool v1.20,0,1

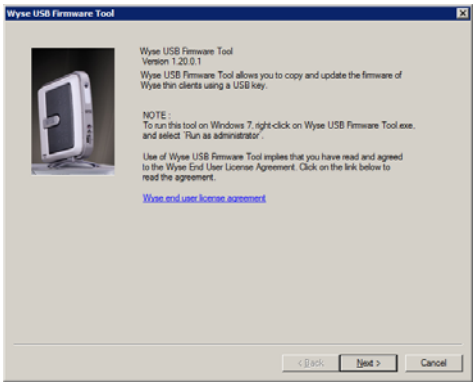
1. Navigate to the Wyse USB Firmware Tool v1.20.0.1_GA.exe (contained on the Conversion Software Assembly DVD-ROM).
2. Right-click the Wyse_USB_Firmware_Tool_v1.20.0.1.exe and click **Run as administrator** to execute the file and open the WinZip Self-Extractor dialog box.
3. Enter the destination folder you want (for example, **C:\USB_v_1.20.0.1**) in the **Unzip to folder** box, and then click **Unzip** to extract all files from the Wyse USB Firmware Tool v1.20.0.1_GA.exe file into the folder. The default directory for the extracted files is **C:\USB_v_1.20.0.1**.
   CAUTION: It is not recommended to use your desktop for the destination folder as there are several files that will be extracted from the .exe file.
4. After installation, create a shortcut on the desktop for the Wyse USB Firmware Tool.exe file (see your operating system documentation).

Step 3: Use Wyse USB Firmware Tool to Configure a Single USB Key that will Push Firmware

CAUTION: Complete the configuration procedures as an administrator. For Windows 7 Enterprise and Windows 7 Ultimate, right-click on **Wyse USB Firmware Tool.exe** and select the Run as administrator option.

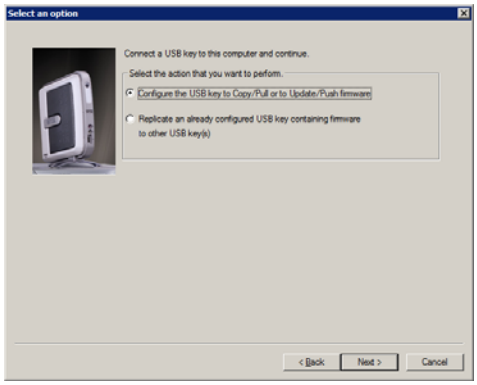
1. Right-click the shortcut on the desktop for the Wyse USB Firmware Tool.exe file and select Run as administrator to run the tool and open the Wyse USB Firmware Tool wizard (the welcome page provides the product version and description, and a link to view the Wyse end user license agreement).

Figure 7 Wyse USB Firmware Tool wizard


Wyse USB Firmware Tool
Wyse USB Firmware Tool
Version 1.20.0.1
Wyse USB Firmware Tool allows you to copy and update the firmware of Wyse thin clients using a USB key.
NOTE :
To run this tool on Windows 7, right-click on Wyse USB Firmware Tool.exe, and select 'Run as administrator'.
Use of Wyse USB Firmware Tool implies that you have read and agreed to the Wyse End User License Agreement. Click on the link below to read the agreement.
Wyse end user license agreement
< Back
Next >
Cancel

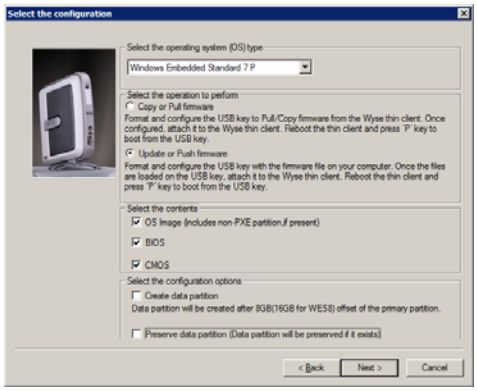
2. Click **Next** to open the **Select an Option** dialog box.

Figure 8 Configuration options


Select an option
Connect a USB key to this computer and continue.
Select the action that you want to perform.
Configure the USB key to Copy/Pull or to Update/Push firmware
Replicate an already configured USB key containing firmware to other USB key(s)
< Back
Next >
Cancel

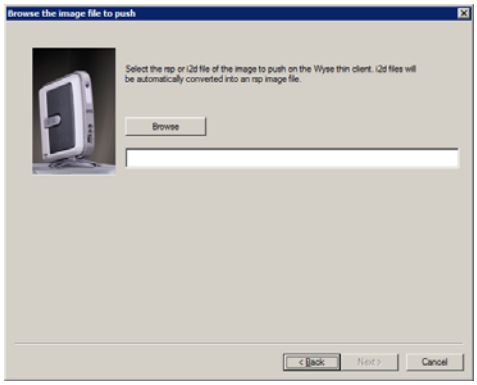
3. Select the **Configure the USB key to Copy/Pull or to Update/Push firmware** option, and then click **Next** to open the **Select the Configuration** dialog box.

Figure 9 Update firmware options - Windows Embedded Standard 7 P


Select the configuration
Select the operating system (OS) type
Windows Embedded Standard 7 P
Select the operation to perform
Copy or Pull firmware
Format and configure the USB key to Pull/Copy firmware from the Wyse thin client. Once configured, attach it to the Wyse thin client. Reboot the thin client and press 'P' key to boot from the USB key.
Update or Push firmware
Format and configure the USB key with the firmware file on your computer. Once the files are loaded on the USB key, attach it to the Wyse thin client. Reboot the thin client and press 'P' key to boot from the USB key.
Select the contents
OS Image (includes non-PXE partition,if present)
BIOS
CMOS
Select the configuration options
Create data partition
Data partition will be created after 8GB(16GB for WES8) offset of the primary partition.
Preserve data partition (Data partition will be preserved if it exists)
< Back
Next >
Cancel

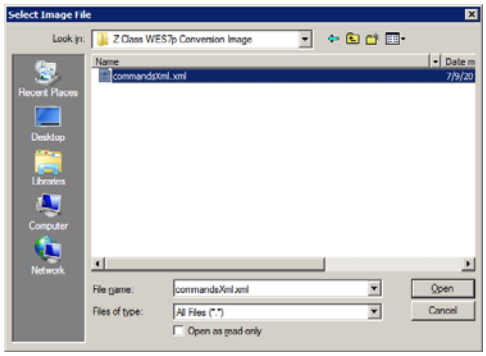
4. Select the **Windows Embedded Standard 7 P** operating system (OS) type option.
5. Select the **Update or Push Firmware** operation to perform option. Be sure that all three contents options are selected (**OS Image**, **BIOS**, and **CMOS**).
6. Clear/uncheck the **Preserve data partition** check box.
   CAUTION: **Details for Thin Clients Currently Using Multiple Data Partitions**: Your existing custom data partition will not work with the WES7p firmware and you must rebuild your custom data partition after you convert to WES7p. Although the **Preserve data partition** check box is automatically selected to preserve any existing custom data partition you may have on the thin client (useful for same firmware platform upgrading use cases), be sure to clear/uncheck the check box to remove the existing data in the custom data partition.
7. Click **Next** to open the browse dialog box.

Figure 10 Browse for image file


Browse the image file to push
Select the rsp or i2d file of the image to push on the Wyse thin client. i2d files will be automatically converted into an rsp image file.
Browse
< Back
Next >
Cancel

8. Click **Browse**.

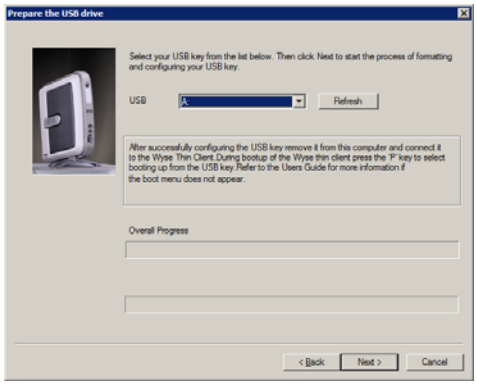
Figure 11 Browse to select commandsXml.xml



9. Navigate to the Z Class WES7p Conversion Image folder (on your hard drive) that contains the **commandsXml.xml** file (this is the location you selected in "Step 1: Copy the Z Class WES7p Conversion Image Folder (on the DVD-ROM) to Your Local Hard Drive"), click on the **commandsXml.xml** file to select it (you may need to select the All Files option from the Files of Type box to display the **commandsXml.xml** file for selection), and then click **Open**.
CAUTION: Be sure to use the **commandsXml.xml** file you extracted in "Step 1: Copy the Z Class WES7p Conversion Image Folder (on the DVD-ROM) to Your Local Hard Drive"; DO NOT use the **commandsXml.xml** file directly from the Conversion Software Assembly DVD-ROM.

10. In the browse dialog box, click **Next** to open the **Prepare the USB Drive** dialog box.

Figure 12 Prepare USB drive


Prepare the USB drive
Select your USB key from the list below. Then click Next to start the process of formatting and configuring your USB key.
USB
A:
Refresh
After successfully configuring the USB key remove it from this computer and connect it to the Wyse Thin Client. During bootup of the Wyse thin client press the 'F' key to select booting up from the USB key. Refer to the Users Guide for more information if the boot menu does not appear.
Overall Progress
< Back
Next >
Cancel

11. Select the USB key onto which you want the configurations (you can use **Refresh** as needed to recognize an inserted USB key), and then click **Next**. The progress bars show the overall (formatting and configuration) progress and task progress.
CAUTION: DO NOT interrupt the formatting and configuration process. All process requirements are done automatically.

12. After configuration, click **Finish** to close the wizard and then remove the configured USB key for use (you will use the configured USB key on your target devices).

TIP: At this time you can also replicate/duplicate the configured USB key (containing the firmware you want to push) for simultaneous usage on target devices (by users in several locations at the same time). For full Wyse USB Firmware Tool details, see Users Guide: Dell® Wyse USB Firmware Tool 1.20.0.1.

Step 4: Use the Configured USB Key to Install Firmware on Each Thin Client

In this step, you will boot each target device you want to convert from the configured USB key so that the USB key will push the contents from the USB key onto the target device.
NOTE: BIOS selection, movement, and exit instructions are displayed in the BIOS window.

1. Be sure the client is shut down and disconnected from any network.
2. Attach the configured USB key to a thin client USB 2.0 port.
3. Power on the thin client and during boot, press and hold the **P** key to boot to the BIOS screen.
4. Enter the password **Fireport** (this is case sensitive) and press **Enter**.
5. Select the **Advanced** tab.
6. Using the down arrow key, select the **Boot from USB** option and press **Enter**.
7. Select the **Enabled** option and press **Enter**.
8. Select the **Boot** tab.
9. Select the **USB HDD** option (displaying your USB key vendor name) and move it to the *Boot Priority Order* **1** position by using the + key.
10. Press the **F10** key to save, exit, and reboot the client from the configured USB key. When booting a *target* device from the configured USB key (*containing the contents to be pushed to a target device*), you will be prompted to continue with the *push* process (to continue, type **y** and press **Enter**). Once the *push* process is complete, the client automatically reboots several times.
CAUTION: *DO NOT* interrupt the installation/conversion process. All process requirements are done automatically. The client automatically reboots several times. Some screens may display for several seconds during the process.
11. After a target device completes the installation/conversion process and displays the WES7p desktop, remove the USB key and continue with "Step 5: Verifying Thin Client Operation."

TIP: You can use the configured USB key to push the firmware onto as many target devices as you want (repeat "Step 4: Use the Configured USB Key to Install Firmware on Each Thin Client").

Step 5: Verifying Thin Client Operation

After the thin client displays the WES7p desktop, you can verify the Version and that your general client information is correct.

1. On the General tab of the Wyse Client Information window (**Start** > **All Programs > Wyse Client Information**), verify the following:
   - Version is **9.01 Build 850**.
2. Click **Close** to close the Wyse Client Information window. The thin client is ready for operation and setup by an administrator.
   TIP: For security, automatic logon to a User desktop is enabled on the thin client by default (and is a member of the User group; not a member of the Administrator group). To log on as a different user or an administrator: Use the Log off button (**Start > Log off**) to log off the current desktop while holding down the SHIFT key until the Log On window displays. Log on as follows (passwords are case sensitive): Administrators - default Username is **administrator** and default case-sensitive Password is **Wyse#123**.
   Users - default Username is **user** and default case-sensitive Password is **Wyse#123**.
   Administrator and other documentation for your thin client model are available at: http://www.wyse.com/manuals.

Step 6: Attach a Wyse Conversion Label and Microsoft License Label on Each Converted Thin Client

The conversion kit is supplied with Wyse Conversion Labels and Microsoft License Labels that must be attached to each thin client. Be sure you have purchased the amount of labels you need.
CAUTION: Failure to install the label may cause delays in service and support. The serial number must be given to a Customer Support Technician to validate entitlement to support and service from Dell. Failure to do so will result in the original operating system being loaded on the device and is in breach of your license agreement.

Figure 13 Placement of Wyse Conversion Label (blank example)

Figure 14 Placement of Microsoft License Label (blank example)

Step 7: Obtain a Firmware Update

After converting your thin clients, obtain any available firmware update at http://www.wyse.com/serviceandsupport/support/downloads.asp.
WARNING: Use of the Software on more than one device requires that you first purchase from Dell additional copies of, or licenses to, the Software. Contact your local Dell distributor or Dell Inside Sales at 1-800-800-9973 option 1 or 1-408-473-1200 option 1.

Troubleshooting

This section contains general troubleshooting information.

USB Keys - Troubleshooting Boot Issues

Due to different manufacturing processes on USB keys (and the variety of them), not all brands have been tested with the Wyse USB Firmware Tool. If you experience problems booting from a configured USB key, it is recommended that you try a different brand of USB key.

SanDisk Cruiser Flash Drives - Troubleshooting Partition Issues

Problem: How can I properly use a SanDisk Cruiser flash drive to image supported devices using the Wyse USB Firmware Tool? (KB17735)

Solution: SanDisk flash drives come with support for U3 (for details on U3, see http://www.u3.com). When you initially use these drives, you are prompted to select the use for the drive: Apps and Storage or only Storage. If you select the Apps and Storage option, the drive will create two partitions, one of which is identified as a CD and is a read only partition. This partition sometimes prevents the Wyse USB Firmware Tool to properly prepare the USB key for imaging a device. To resolve this problem you can do one of the following:

- Go to http://www.sandisk.com, search in the SanDisk Knowledge Base for document **2550**, and then follow the instructions in the documentation.
- Go to http://www.sandisk.com/DriverDownload/driverList.asp, select **USB Flash Drives** from the Select Product Type list, click **Find Driver**, select **U3 LaunchPad Remover**, click **Continue**, and then download and use the U3 Launchpad Remover according to the instructions.

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